GPS Vehicle Tracker with Camera

PT600X

User Manual

Please read carefully before operation

www.bofan.cc

1 Product overview

PT600X is an improved version based on PT600, it is a GPS/GSM/GPRS tracking device which is specially developed and designed for vehicle real-time tracking and security. With superior GPS and GPRS modules, PT600X has good sensitivity and stable performance. Especially, PT600X is well designed to work with LiveGTS, our web-based tracking system, which is suitable for a company to establish their own tracking platform to provide real-time tracking service to their customers or manage their fleet.

Main features:

Tracking via SMS or GPRS
Current location report
Tracking by time interval
SOS alarm (available to preset 3 SOS number)
Geo-fencing control
Low battery alert
Speed alert
Engine Cut (optional)
Position logging capacity up to 30000+ waypoints if no GPRS signal
Save half GPRS cost at least when working on FMS in different ways (BOFAN Smart Report Tech, ACC, Mileage, Motion sensor)
Get street address by SMS request
Get Google link for current location by SMS request
Compatible with car alarm existing in car originally
Support door open/close status, available to control open/close car by SMS or platform
Support taking photo by extra camera (optional), 6KB for each photo
Take photo at a preset time interval
Take photo automatically and send to server by interval when SOS or Geo-fence or other alarm types trigger
Available to set different alarm notification ways when alarm (sending alarm SMS, call, platform or taking photo)
Car maintenance remind by mileage report
Support alarm in case of oil leakage when working with LiveGTS on FMS
Automatically cut off oil or activate siren locale when Geo-fence or speed alarm triggers
Support shake alarm
Support voice monitoring and two way conversation
Mileage and GPRS report by distance
Support RFID function by extra card reader (Optional)
I/O: 5 digital inputs, 3 negative and 2 positive triggering; 4 outputs.
Analog Input: 4 10 bits resolution analog inputs

For operate safely, please refer to following simple guidelines:

Proper Connection: When installing tracker in vehicle, please read the manual carefully
Correct installation. Don't connect it to other incompatible devices.
Qualified Accessories: Use original parts, qualified batteries and peripheral equipments to avoid damage to PT600X
Safe Driving: Drivers should not operate this device while driving.
Qualified Service: Only qualified person can install or repair PT600X
Water Resistance: PT600X is not water resistance. Keep it dry. Install it inside the vehicle.
Confidential Phone Number: For safety reason, don't tell your PT600X's SIM number to others without taking precautions of security settings.

GPS communication is liable to be affected by environmental shielding; may fail to carry out positioning during certain circumstances. It will resume the positioning function as soon as it leaves the shielding environment. This is normal. Please do not worry when encountering such problem.

Each signal sent out from the system will be confirmed for successful transmission in the base station of the mobile operator. However, if system stoppage occurs or if the mobile telephone is preset to a switch off state by the customer, it cannot ensure successful transmission.

2 Parameters of PT600X

Feature	Characteristics
Power Supply	+9V to +40V
Power Consumption For VBATT	Active mode(peak) < 1.0A Active mode(avg.) < 300mA Idle mode < 15mA
Operating Temperature Range	-20℃ to +60℃
Storage Temperature Range	-20℃ to +70℃
Humidity	Up to 75% non-condensing
External Antenna	Connected via the 50Ω coax connector
External SIM Card	Connected via SIM Card connector
SIM card type	3V
Transmit Power	Class 4(2W) for E-GSM 900 and 850 Class 1(1W) for DCS 1800 Class 1(1W) for PCS 1900
Sensitivity	-104 dBm minimum for E-GSM 900 and 850 -102 dBm minimum for DCS 1800 -102 dBm minimum for PCS 1900
Speech Codec	Triple rate Codec: Half rate –ETS 06.20 Full rate –ETS 06.10 Enhance Full rate-ETS 06.50/06.06/06.08
GPRS	Multi-slot Class 8(4Rx, 1Tx, 5 slot Max.) Support all 4 coding schemes(CS-1, CS-2, CS-3 and CS-4) ● Maximum download speed is 85.6kbps ● Maximum upload speed is 21.4kbps
Dimensions	8.8 x 8.3 x 3.5 (cm)

3 Getting started

This section will describe how to set up your PT600X

3.1 Hardware and Accessories

PT600X standard package includes following items:

- 1* PT600X Main Unit
- 1* GPS Antenna
- 1* GSM Antenna
- 1* Plug-in power Wires

Optional accessories:

- Speaker (the new speaker interface is different with the old one)
- Microphone ((the new microphone interface is different with the old one))
- Normal Camera (the new normal camera interface is different with the old one)
- Relay (Optional, for cutting off oil/engine to stop car, 12V relay for car, 24V relay for truck)

• Main unit	• GPS Antenna	• GSM Antenna	• Plug-in power Wires
• Speaker (Optional)	• Microphone (Optional)	•Camera (Optional)	• Relay (Optional)

3.2 Connecting and Installation

If you install your tracker in car directly, please follow below steps:

Notes: If you test your tracker in office, please charge the tracker via 12V external power charger for 3 hours at least before following below steps, once you connect the tracker power wire (red/black) to external power supply wire directly, it is in charging.

First, install the SIM card into tracker

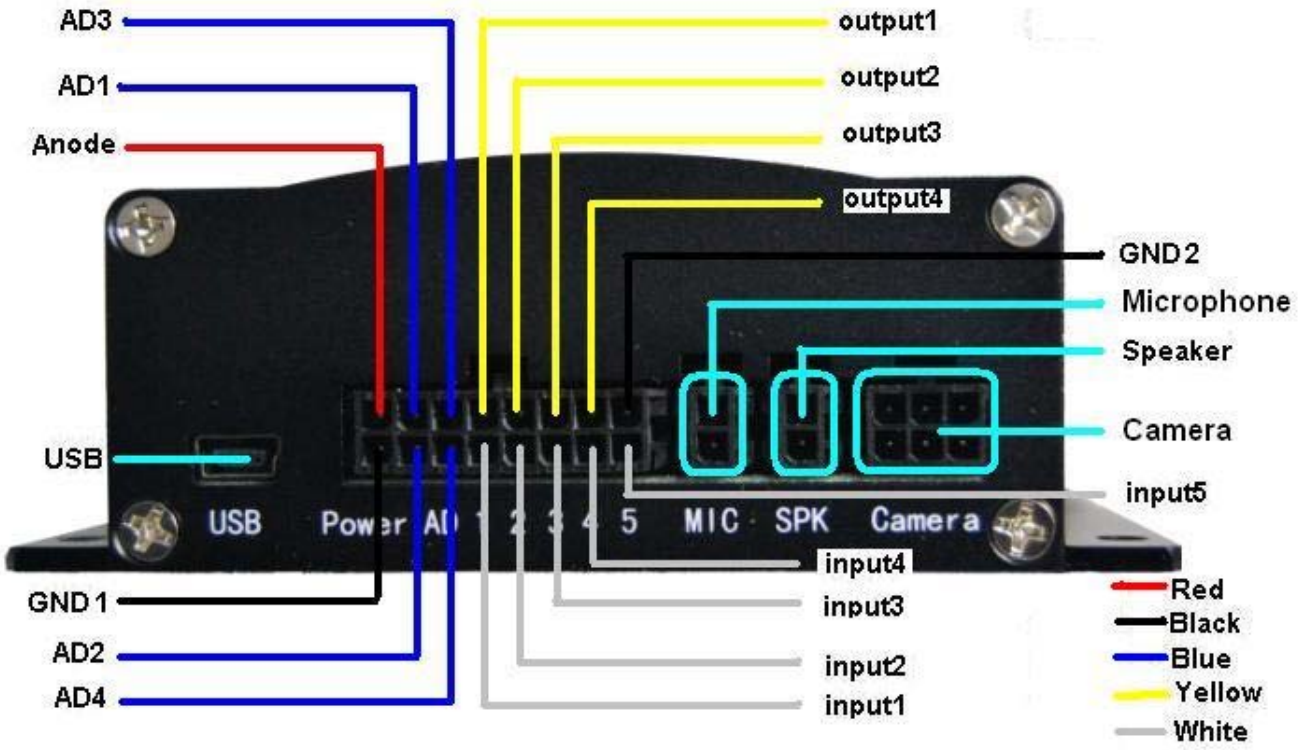
(Press the yellow button to make the Card Holder out).

Notes: the SIM card must support GPRS service, and when you install this SIM card in mobile, you can use this mobile dial phone, answer coming calling, send and receive SMS. It is GSM card not CDMA card. And please disable the SIM card PIN code.

Second, connect antennas and wires

<table>
<tr><td> </td><td> </td><td> </td></tr>
<tr><td>connect the GSM Antenna</td><td>connect the GPS Antenna</td><td>connect the wires</td></tr>
<tr><td rowspan="5"> </td><td colspan="2">Red wire: connect to positive pole of car battery
DC In. Input voltage:9V~35V.12V suggested</td></tr>
<tr><td colspan="2">Black wire: GND, one connect to cathode of car battery
The other one already connects to SOS key</td></tr>
<tr><td colspan="2">White wires: Digital Inputs (Refer to Examples of Interfacing Applications below)
the wires is optional, please do not connect them if not necessary</td></tr>
<tr><td colspan="2">Yellow wires: Output Inputs (Refer to Examples of Interfacing Applications below)
the wires is optional, please do not connect them if not necessary</td></tr>
<tr><td colspan="2">Blue wires: 10 Bits Resolution Analog Inputs. Input voltage: 0~6V. (Refer to Examples of Interfacing Applications below)
the wires is optional, please do not connect them if not necessary</td></tr>
</table>

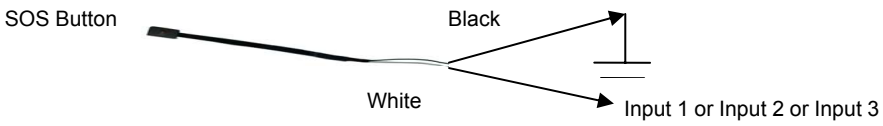
Examples of Interfacing Application （I/O）



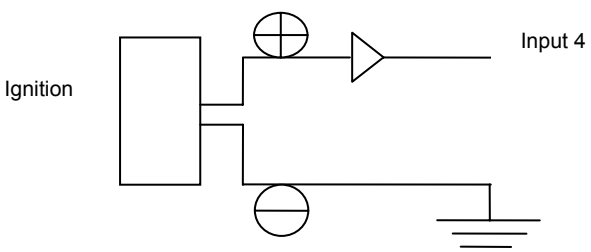
Notes: When you need to disconnect PT600X's plug-in wire / speaker / microphone / camera, please press the socket at first and then disconnect it.

For Input Ports

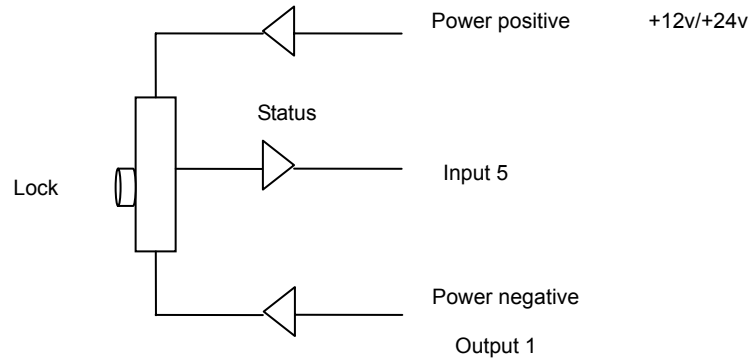
1. SOS Button - Input 1 / Input 2 / Input 3



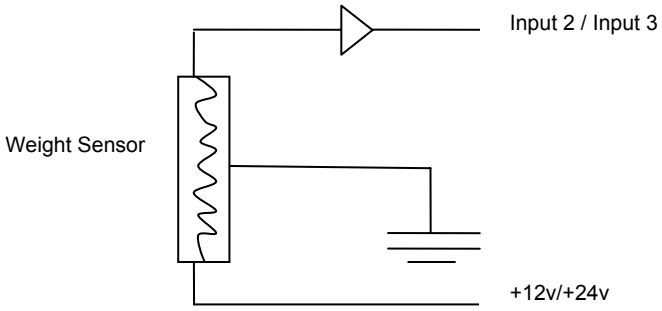
2. Ignition Detection - Input 4



3. Detecting Lock Status of Car's Door or Trunk(Car Boot): Locked or Unlocked - Input 5

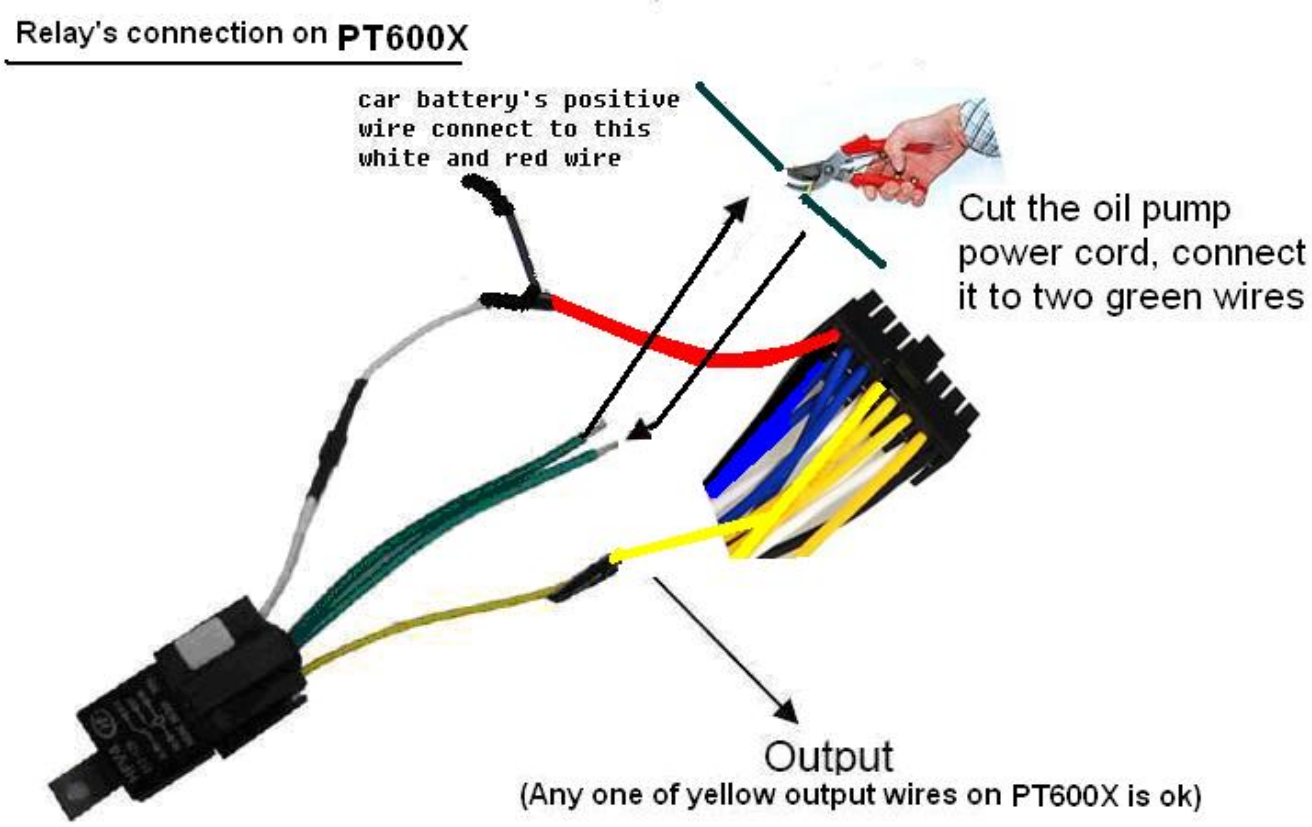


4. Connecting with Sensors (such as weight sensor) - Input 2 / Input3



For Output Ports

1. Engine Cut (optional)


Relay's connection on PT600X
car battery's positive wire connect to this white and red wire
Cut the oil pump power cord, connect it to two green wires
Output
(Any one of yellow output wires on PT600X is ok)

After you

connect relay according to above picture correctly, you can send following SMS commands to stop car or restore the circuit:

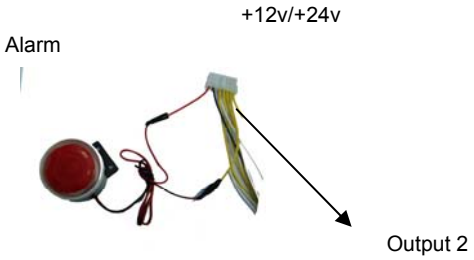
Stop Car: 000000OPC1,1

Restore circuit: 000000OPC1,0

Notes: if you connect output2 to relay yellow wires, then you need to send 000000OPC2,1 command to stop car.

Please don't use this feature while car/vehicle with high-speed driving, and we suggest connect relay with fuel control line in your car, Bofan is not liable for any traffic accidents.

2. Connecting with alarm siren (optional)



If you want to speed alarm or geo-fence alarm trigger this siren to have locale alarm, please refer to "AN" and "SAL" command in SMS Command List. Or connect your sales representative to help you program it.

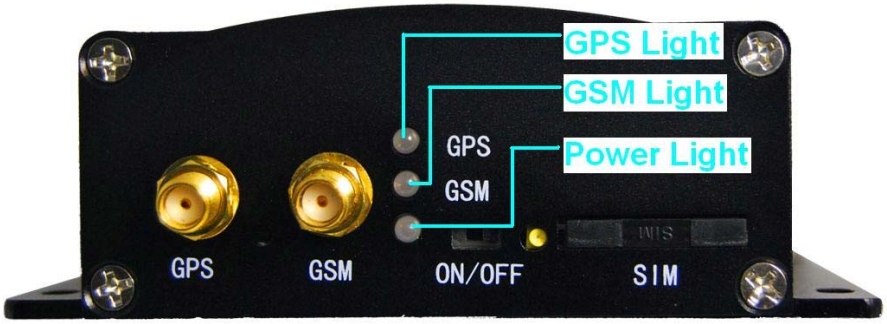
For Analog Input

If you want to use this analog input sensor, please get the sensor minimum and maximum voltage and program it by AV command firstly, then define AD on software or program AD Alarm by SMS command according to your needs.

Third, turn on the tracker

make this toggle switch on left side to turn on PT600X

After turn on the tracker, please refer to the signal light Functionality.



GPS signal Light - indicating GPS signal status	
RED light Flashing fast	The unit is being Initialized
RED light Flashing (on for 2 seconds and off for 2 seconds)	Initialization succeed but GPS signal does not fix
Green light Flashing (on for 0.1 second and off for 2.9 seconds)	PT600X has GPS signal
GSM signal Light - indicating GSM signal status	
RED light Flashing fast	The unit is being Initialized
RED light Flashing (on for 2 seconds and off for 2 seconds)	Initialization succeed but GPS signal does not fix
RED light Flashing (on for 0.1 second and off for 2.9 seconds)	PT600X is connected to the GSM network
Green light Flashing (on for 2 seconds and off for 2 seconds)	PT600X does not connect to server successfully after making GPRS communication settings
Green light Flashing (on for 0.1 second and off for 2 seconds)	PT600X connects to server successfully after making GPRS communication settings
Power Light - indicating Power status	
Green Light keep on bright	PT600X is connected with external power source
Green Light keep on flashing	PT600X is not connected with external power source but has sufficient power
Red Light keep on flashing	PT600X is not connected with external power source and has no sufficient power
RED Light Flashing fast	No power, please charge immediately

4 Start Tracking

You can start to track your car or test the tracker after GSM and GPS light work normally. There are two ways to track the car, one is by SMS on mobile basically and the other one is via GPRS on LiveGTS software platform.

4.1 Tracking by SMS on mobile:

Tracker replies SMS with coordinates:

When you want to know the PT600X location, you can call the SIM card number in PT600X or send a SMS command to PT600X from your mobile, and after some seconds, it will reply a SMS with the position Lat & Log data to your mobile.

To get position by calling:

(a) Call the SIM card number in PT600X from your mobile phone.

(b) PT600X will hang up automatically after several rings, then replies a position SMS to your mobile phone.

Notes: if you don't like the tracker reply a message after calling, you can send command **000000OPT0** to close this function, if you want to restore this function later, you can send command **000000OPT1** to activate this function again.

To get position by SMS command:

SMS Command: <password>RCP

For example: you edit this SMS: 000000RCP on your mobile phone and send it out to the SIM card number in PT600X

Notes: The default password of tracker is 000000, if you already changed the tracker password, please use the new password in command.

After a few seconds, you will get a SMS reply with below content on your mobile phone:

Latitude = 22.5632 Longitude = 114.0940, Speed = 2.6854Km/h, Odometer = 10.98KM GPRS: ON, EXPW: OFF, Time: 2010-12-07 08:47:45

Explanation: GPRS means GPRS state:

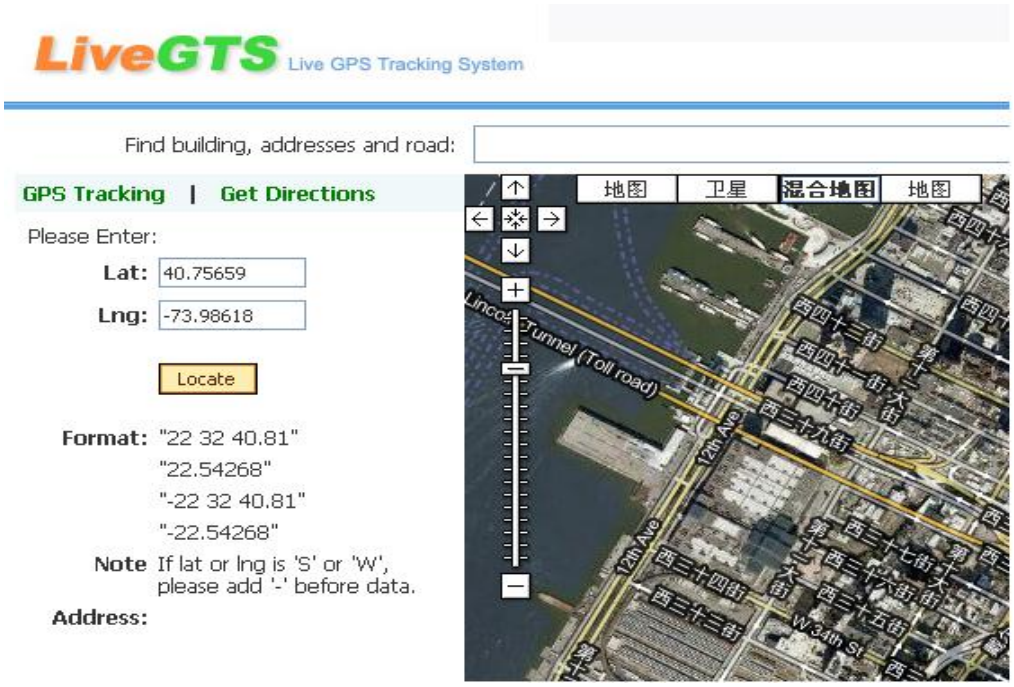
ON: GPRS connect ok OFF: GPRS disconnect Fail: GPRS connect fail

EXPW means external power state:

ON: connect external power already OFF: disconnect external power

Notes: when your tracker doesn't get GPS signal, it will reply a SMS with "**Last:** Lat=22.5632 Lng=114.0940 Speed=0.00KM/h Odometer=0.000KM GPRS:OFF EXPW:OFF Time:2010-12-08-08:58:45 It means this data is for the last place where the tracker got GPS signal successfully.

You can visit our LiveGTS demo http://demo.livegts.com which includes the Google map, manually input the latitude and longitude what you get from this reply SMS and click the "Locate" button. It will display the location on map. Please refer to following picture:



4.2 How to live track on LiveGTS platform:

If you want to do live tracking on platform, you need strictly set tracker ID, server, Port, APN and time interval for PT600X as per below steps 4.2.1~4.2.5.

Firstly please ensure that your SIM card in PT600X supports GPRS connection prior to setting

4.2.1 Add the tracker into LiveGTS software

Login LiveGTS: You can open your tracking website by IE and login with your account.

Go to “Manage” -> “Tracker Config” -> click “Add New Tracker”, please fill in name and tracker ID, select correct tracker Model, click ”Modify” button to add this tracker into software successfully.

Notes:

Name: you can use any name for your tracker

Tracker ID: Tracker ID can be any digit numbers you want, but must start with the fixed three numbers shown in FMS or your private

account (here in this example, tracker ID starts with fixed 115 on demo website), and total numbers (includes 115) should be less than 10 digital.

Model: must choose the correct model number PT600

Please remember click " Modify" button after you input information.

At now, please use your mobile to send below SMS commands and configure it to work with LiveGTS Software, after you do all below setting, you can be back to LiveGTS software real-time to check your tracker online.

Notes: use your mobile to send following SMS commands to PT600X SIM card number to program it work on LiveGTS software, please ensure to get tracker's response for your command and then go on sending next command. PT600X will only reply command from a user which uses the correct password. Commands with wrong Password will be ignored.

4.2.2 Set ID for PT600X

Command format : <password>GID<ID>

Example: **000000GID1152011**

PT600X will reply with an SMS (SET OK, ID=1152011) to confirm this setting.

Notes: Please use the exactly full tracker ID (includes 115) you preset into tracking software LiveGTS in above step 4.2.1.

4.2.3 Set APN

Command: <password >APN<APN>, <User>, <Pass>

Example: **000000APNCMNET**

PT600X will reply with an SMS (SET OK, APN: CMNET, USER: PASS :) to confirm this setting (CMNET is China mobile's APN, no username & password in this example).

Notes: You can ask your GSM operator for your APN, username and password, it is used to report data from SIM card to server, if your APN has no username and password, please input APN only.

4.2.4 Set server and port

Command: <password> SVR<domain>, <Port>

Example: **000000SVRDEMO.LIVEGTS.COM, 8600**

PT600X will reply with an SMS (SET OK, IP: DEMO.LIVEGTS.COM) to confirm this setting

Notes: The domain name in this command must be in capital, and "DEMO.LIVEGTS.COM" just is an example at here, please using your domain name when you program your tracker to work on your tracking platform, PT600X's port always is 8600.

4.2.5 Set Report Time Interval for Sending GPRS Packet

Command: <password>GTI<time seconds>

SMS Example: **000000GTI30**

Then PT600X will report data by GPRS to server every **30** seconds. We suggest time interval >= 30 seconds. Time interval value should not exceed 65535 seconds.

Notes: We suggest set report time interval simply as above when testing initially.

Special and Extended Commands for setting report time interval: (If no special demand, it isn't necessary to use)

Command:

<password>GTI<Time Interval>,<Distant Interval>, <Angle>,<Move Ratio>, <ACC Ratio>

If you want to save GPRS cost, the normal way is to use Time Interval and Move Ratio only, you need send below command to tracker to configure :

SMS Example: 000000GTI**30**,**0**,**0**,**120**

Then PT600X will report data to server every **30** seconds when car is moving, but report data every **1** hour (**30**secondsx**120**=3600seconds=**1**hour) when car is not moving.

There is another way of saving GPRS cost, it is to use Time Interval and ACC Ratio, then you can send below command to tracker to configure:

Notes: you must connect car's ignition with PT600's input4 (ACC) wire when using this command.

SMS Example: 000000GTI**30,0,0,0,240**

Then PT600X will report data to server every **30** seconds when car is moving, but report data every **2** hours (**30**secondsx**240**=7200seconds=**2**hours) when car's ignition is OFF.

The complete command's explanation:

Example: 000000GTI**30,300,30,120,240**

Then PT600X will send report data to server every **30** seconds when car is moving,

PT600X will report data to server every **300** meters distance,

PT600X will report data to server when car turns bend for **30** degree or over **30** degree, PT600X will send report data to server every **1** hour(**30** seconds x **120** = 3600seconds= **1** hour) when car stops moving,

And PT600X report data to server every **2** hours (**30**secondsx**240**=7200seconds=**2**hours) when car ignition is OFF.

Now back to LiveGTS and go to "Real-time" page, select your tracker ID, you will see your tracker on the map. All above settings are basic steps to connect to the software.

After PT600X connects to server successfully, you can also:

--Get street address by SMS request

The tracker must work on the LiveGTS successfully and got good GPS&GPRS signal.

Then you can send the SMS command to get the detail address instead of latitude and longitude.

Command: <password>RCA

SMS Example: 000000RCA

SMS reply: Center: Nigang West Road Side Rd, Futian, Shenzhen, Guangdong, China

Notes: tracker can only reply the detail address in English, PT600X will only reply command from a user which uses the correct password. Command with wrong password will be ignored.

--Take photo by extra camera

(Please connect camera to PT600X well before using this function)

You can login LiveGTS software to click “Take photo” button after PT600X connects to server successfully. Please refer to picture below:

5 SMS Command List

(Remarks: the device password is 000000 as default)

Description	Command	Remarks
Get tracker firmware version	<password>**VER**	VER=**Ver**sion
Get current location	<password>**RCP**	RCP=**R**equest **C**urrent **P**osition Get current location's latitude and longitude of PT600X
Two-way communication (please install speaker and microphone on PT600X before using this function)	<password>**TEL**	PT600X SIM card will call your mobile phone after you send the command, once you answer the phone, two way communication begins
Extending use of two-way communication	<password>**TEM2**	If you want to save credit of SIM card number in PT600X, you can send this command, then dial out from your mobile phone to PT600X's SIM card number for two way communication
Voice Monitoring (please install microphone on PT600X before you use this function)	<password>**TEN**	PT600X SIM card will call your mobile after you send the command to PT600X, you can answer this call and start to listen the voice around PT600X
Extending use of Voice Monitoring	<password>**TEM1**	If you want to save credit of SIM card number in PT600X, you can send this command to PT600, later call PT600X's SIM card number from your phone to monitor voice
Get street address by SMS request	<password>**RCA**	RCA = **R**equest **C**urrent **A**ddress Note: this command is only valid when tracker is connecting to server by GPRS successfully and GPRS signal under stable status.
Get Google map link by SMS request	<password>**RCM**	RCM = **R**equest **C**urrent **M**ap (this command is still valid even don't configure PT600X's GPRS connecting)
Set password	<password>**PWD**<new password>	PWD=**P**assw**o**r**d** (must be 6 digits)
Reset password when the previous password is forgotten	**000000RPW**<new password>	RPW=**R**eset **P**assword Please long press the SOS button when you send this command to PT600X (new password must be 6 digits)
Set preset phone number for SOS button	<password>**SOS**,<SOSNumber1>,<SOSNumber2>,<SOSNumber3>	SOS Number: Preset phone number to receive phone call or SMS from PT600X. Max 16 digits. Maximum 3 SOS numbers can be set.

		If only set the 1st number, PT600X will send SMS and then call to this first number after pressing SOS button. If set the 2nd or 3rd numbers too, PT600X will send SMS to all 3 numbers, only call to the 1st number after press SOS button. Note: <password>SOS, command is for cancel all pre set numbers.
Set Over Speed Alert (When car speed is higher than the preset value, PT600 will send an alert SMS to the preset SOS number.)	<password>**SPD**<Max Speed>	SPD=**Sp**ee**d** Max Speed (the preset speed value) =0 to turn off this function =[0,500](unit: Km/h) Example: 000000SPD80 it will send alert when it is over 80Km/h
Set Geo-fence Alert (When car leaves out or enters a preset scope, PT600 will send one Geo-fence SMS to the preset SOS number.)	<password>**GOF**<Type>,<SWLat>,<SWLng>,<NELat>,<NELng>	GOF=**Ge**o-**F**ence Type =1, alert when out of range Type=2, alert when enter this range SW=South-West NE=North-East Example：000000GOF0, to turn off this function
Set Mileage Alert (This Mileage Alert can be sent to your mobile by SMS if you set your mobile number as SOS number into this tracker installed in car and it also can be sent to your email address if you set your email address in software successfully.)	<password>**MLA**<base mileage>,<increment>	MLA=**Mile**a**g**e (Unit: 100 meters) Example: 000000MLA100000,50000 This example means, if the tracker records the car driving more than 10000km, tracker will send one Mileage Alert for each 5000km mileage increments.
Set Odometer	<password>**SOD**	SOD=**S**et **Od**ometer （unit: 100 meters）
For example: **000000SOD** or **000000SOD0** it is to set the tracker's odometer to be "0" **000000SOD100** it is to set the tracker's odometer to be 10km. (100*100meter=10000m=10km) Command 000000SOD5000, it is to set the tracker's odometer to be 500km. (5000*100=500000m=500km)		
Set time zone for tracker (After setting time zone into tracker, you can get your local time in tracker reply message.)	<password>**TMZ**<Time>	TMZ=**Tim**e **Z**one Time from -13 to 13 Example: 000000TMZ8

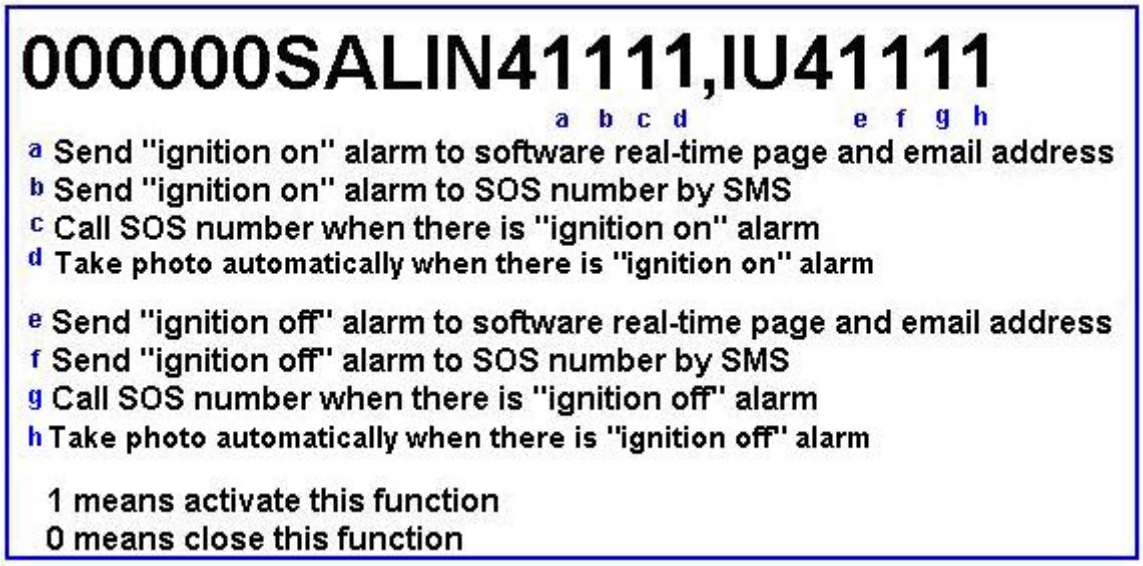
Restart	<password>**RST**<Type>	RST=**Rest**art Type=0 or null, to reboot PT600X Type=1 to reboot GPS Type=2 to reboot GSM
Reset PT600X to default	<password>**DFT**	DFT=**Defaul**t
Request Power	<password>**RPO**	RPO=**R**equest **Po**wer Voltage
Cut Power Alarm	<password>**CPA**<Value>	CPA=**C**ut **P**ower **A**larm Value=0 to disable Cut Power Alarm Value=1 to enable Cut Power Alarm Default set: 000000CPA1
Get IMEI	<password>**IME**	To get tracker's IMEI number (Note: IMEI number can't be tracker ID number.)
Output Control (usually for stop car remotely via extra relay)	<password>**OPC**<Index>,<Action>	OPC=**O**ut**p**ut **C**ontrol Index =1 means Out1 =2 means Out2 =3 means Out3 =4 means Out4 Action=0 to close the output =1 to open the output
Take photo at a preset time interval (Note: this feature is valid when PT600X's firmware version is 1.40 above)	<password>**PTI**<time interval>	PTI= **P**hoto **T**ime **I**nterval Time Interval =0 to turn off this function Time Interval =[120-65535] (unit: second) Example: 000000PTI300 PT600X will take photos every 300 seconds
Set Alarm Action	<password>**AN**<Index1>'#<Index2>',<Index3>,'#<Index4>'	AN=**A**ctio**n** Index1= 1 mean NO.1 Action (it can be 1-5) Index2=OPC2,1 means trigger output2 on OPC3,1 means trigger output 3 on TEL13112345678 means trigger this TEL command to call 13112345678 (any other command can be done at here) Index3=Time (Unit: second) If you want to automatically close the above alarm or trigger another alarm in few seconds, please input the time at index3, and also input next close alarm command at index4.

		Index4=OPC2,0 means close output2 OPC3,0 means close output3 TEL13012345678 means trigger this TEL command to call 13012345678 (any other command can be done at here)
Set Alarm (Different alarms can be set at the same time, just use "," between different alarms, please refere to below example details for ignition on/off alarm.)	<password>**SAL**<Alarm type><Index1><Index2><Index3><Index4><Index5>	SAL=**S**et **Al**arm Alarm type =IN1, for input1 IN2, for input2 IN3, for input3 IN4, for input4 IN5, for input5 SPD, for over speed alarm GEO, for geo-fence alarm MLA, for Mileage Alarm SKA, for shake alarm LPA, for low power alarm IU1, for input1 up IU2, for input2 up IU3, for input3 up IU4, for input4 up IU5, for input5 up (any alarm command) Index1=1, to alert on platform =0, do not alert on platform Index2=1, to send alert SMS =0, do not send alert SMS Index3=1, to call the preset SOS phone number =0, do not call the preset SOS phone number Index4=1, to take photo =0, do not take photo Index5=Action No. (if you want to trigger above 2nd alarm action, then input 2 at Index5 at here) **Default set:** 000000SALIN11110 000000SALIN21110 000000SALIN31110 000000SALIN40000 000000SALIN50000

For example:

000000SALIN11110

That means, when input 1(SOS key) is pressed, PT600X will send SOS alarm on platform, send alarm SMS to SOS number, call to SOS number, but do not take photo


000000SALIN41111,IU41111
a b c d e f g h
a Send "ignition on" alarm to software real-time page and email address
b Send "ignition on" alarm to SOS number by SMS
c Call SOS number when there is "ignition on" alarm
d Take photo automatically when there is "ignition on" alarm
e Send "ignition off" alarm to software real-time page and email address
f Send "ignition off" alarm to SOS number by SMS
g Call SOS number when there is "ignition off" alarm
h Take photo automatically when there is "ignition off" alarm
1 means activate this function
0 means close this function

AD alarm	<password>**AD**<index1><index2> <Parameter>,<alarm name>,<index3>	Index1 =1 means AD 1 =2 means AD 2 =3 means AD 3 =4 means AD 4 Index 2 =[</>] Parameter=[0~100] (unit: %) Alarm name = default is AD1 alarm, if you use “fuel alarm” at here, you will get alarm fuel alarm SMS contents. Index3 = 1 means input1 2 means input2 3 means input3 4 means input4 5 means input5

For example:

000000AD1<10,Fuel Low,4

After you connect fuel sensor to PT600X AD1 wire, PT600X will send Fuel Low alarm SMS to SOS number when tracker get AD1 data <10%, but this alarm is effective only when input4 on (if you connect input4 to car ignition, then it means car ignition on).

Notes: if your fuel sensor keep working even when car ignition off, you don’t need to set index3 as input4 here.

000000AD2>30,Temp High,4

After you connect temperature sensor to PT600X AD2 wire, PT600X will send Temp High alarm SMS to SOS number when tracker get AD2 data >30%, but this alarm is effective only when input4 on (if you connect input4 to car ignition, then it means car ignition on).

Notes: if your temperature sensor work independently, and don’t depend on car ignition, then you don’t need to set index3 as input4 here.

Set Analog Voltage (If your analog sensor max voltage is not 6V, then you need to do this setting, to let tracker know what is your sensor voltage specification)	<password>**AV**<AD Port><min voltage of sensor>,<max voltage of sensor>,24	AV=**A**nalog **V**oltage AD Port=1 means AD1 =2 means AD2 =3 means AD3 =4 means AD4 Min voltage of sensor=input your sensor min voltage at here Max voltage of sensor=input your sensor max voltage at here, it can't be over the max voltage of tracker support.
Shake Alarm (or Move Alarm) (PT600X with built-in motion sensor to support this function.)	<password>**SKA**<index>	SKA= **S**ha**k**e **A**larm Index = 1, to send shake alarm SMS to SOS number when PT600X shakes = 0, not to send shake alarm SMS to SOS number when PT600X shakes.
Define motion sensor sensitivity	<password>**MSS**<value>	MSS=**M**otion **S**ensor **S**ensitivity Value= number range is 1-15 Default set: 000000MSS3 (The larger value, the lower sensitivity)
Set char for alert SMS contents	<password>**ACH**<Alarm><Char>	ACH=**A**larm **Ch**ar Alarm=IN1, for input1 (SOS Alarm) IN2, for input2 IN3, for input3 IN4, for input4 IN5, for input5 SPD, for over speed alarm GEO, for geo-fence alarm MLA, for Mileage Alarm SKA, for shake alarm
For example: 000000ACHIN4Engine Start it means PT600X will send a "Engine Start" SMS to SOS number when there is ignition on alarm.		
Clear Saved data	<password>**CSV**	CSV=**C**lear **Sav**ed data
Check previous command setting	<password>**ASK**<Command>	Examples: 000000ASKSVR, to check the server & port what you set 000000ASKGID, to check the tracker ID what you set
Basic GPRS setting for connecting device to server (Ensure that your SIM card supports GPRS service)		
Set ID	<password>**GID**<ID>	Tracker ID can't exceed 10 digit

Set APN	<password >**APN**<APN>,<Username>,<Password>	If your APN doesn't have username and password, type APN only; (Please get the correct APN of SIM card in tracker from your SIM card provider)
Set Server	<password>**SVR**<domain>,<Port>	Domain: the tracking platform domain name Port: 8600, fixed for PT600X
Set Time Interval (for Sending GPRS Packet to software server)	<password>**GTI**<Time Interval>,<Distant Interval>, <Angle>,<Move Ratio>,<ACC Ratio>	GTI=**G**PRS **T**ime **I**nterval Time Interval =0,to turn off this function Time Interval =[5-65535] (unit: second) Distant Interval =0, to turn off this function Distant Interval =[100-65535]，(unit: meter, suggest Distant Interval >500) Angle=0, to turn off this function Angle= [15-360], (unit: degree, suggest Angle > 30) Move Ratio=0, to turn off this function Move Ratio≧1 only integer ACC Ratio=0, to turn off this function ACC Ratio≧1 only integer NOT suggest use all Distant Interval and Angle and Move Ratio and ACC Ratio if you don't have special needs.

6 Trouble shooting

Problem: Device can't power on	
Possible Cause:	**Resolution:**
Wiring was not connected properly	Check if wiring connection is in order.
Battery needs charging	Recharge battery
Problem: Device doesn't respond to SMS	
Possible Cause:	**Resolution:**
GSM antenna was not installed properly	Make PT600X in good GSM network coverage.
Low power	Connect power cable to car battery directly or use 12V charger to charge it for 3hours at least
GSM Network is slow	Wait for SMS. Sometimes GSM network slows down during peak time or base has problem.
Wrong password in your SMS or wrong SMS	Write correct password or SMS format

format	
The SIM in PT600X runs out of credit	Recharge credit of the SIM card
No SIM card	Insert working SIM card. Check in phone that the SIM can send SMS message.
SIM card has expired	Check in phone if the SIM card can send SMS message. Replace SIM card if need.
SIM has PIN code set	Remove PIN code by inserting SIM card in your phone and deleting the code.
SIM is warped or damaged	Inspect SIM card, clean the contacts. If re-installing does not help, try another to check
Roaming not enabled	If you are in another country, your SIM card must have roaming service enabled.
Problem: Reply SMS starts with 'Last…'	
Possible Cause:	**Resolution:**
PT600X does not have clear view of the sky	Move the antenna of the unit to a location where the sky is visible.
PT600X is indoor	Make it work in an open area outside
Battery power is low	Recharge device
Problem: Can't real-time tracking on platform	
Possible Cause:	**Resolution:**
GPRS setting is not correct.	Please set each step strictly according to user manual.
APN is wrong	Ask your GSM provider for the correct APN, username and password if it has, then set again.
Tracker ID set by SMS command is not same as that one written in software	Check if the trackers ID you set into tracker is same exactly as the one you write in software.

Welcome to contact your sales representative in our company or by email bofanelectronics@gmail.com if you have any questions.